

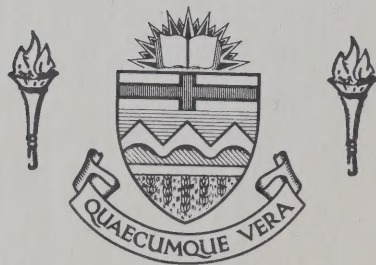
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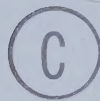




THE UNIVERSITY OF ALBERTA

DETERMINANTS OF NEIGHBOURHOOD SATISFACTION IN EDMONTON,  
ALBERTA

by



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A THESIS

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## ABSTRACT

This thesis presents an empirical examination of the effects of the social and physical context of the neighbourhood on neighbourhood satisfaction of residents in Edmonton, Alberta.

A review of the literature reveals that urban research has historically emphasized the relationship of the social and cultural components and satisfaction and minimized the importance of the man-built environment. To this end neighbourhood satisfaction will be measured in relation to five neighbourhood attributes. The types of attributes are: 1. neighbourhood design, 2. density factors, 3. neighbourhood social structural characteristics, 4. housing satisfaction, 5. level of interpersonal relationships within each neighbourhood. Fifteen variables were constructed and tested in all.

A structured interview administered to a multi-stage sample of 341 residents in Edmonton, Alberta provides the data. Regression is the principle technique used in the data analysis.

Moderately strong and statistically significant correlations are found between neighbourhood satisfaction and four of the five sets of attributes, with level of interpersonal interaction having a small and insignificant correlation with the criteria.

The multiple regression analysis isolated six variables that have significant independent effects on neighbourhood





satisfaction, (grain, housing satisfaction, average age of residents, level of interpersonal relationships, internal and external density). Both grain and housing satisfaction were found to be positive predictors of neighbourhood satisfaction, explaining 35.24% of the variance and accounting for 67.38% of the total variance of the reduced form equation. The analysis shows that the neighbourhood and housing design factors substantially effect neighbourhood satisfaction and it is time to turn away from the question of whether the physical environment has effects, to the study of design factors which magnify or minimize these effects.





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## CHAPTER I

### STATEMENT OF THE PROBLEM

The study of the relationship between different neighbourhood environments and the attitudes of their residents has been given a considerable amount of attention. The residential environment, besides being the most abundant land-use type in the city, is recognized as a basis of healthy, personal, social, and physical development (Duhl, 1963). In addition, while people make use of community recreational, shopping, educational, and health facilities, the greatest proportion of residents' discretionary time is spent in and around their homes (Chapin, 1965).

We therefore intend to investigate more closely the factors that promote feelings of satisfaction with a neighbourhood design. In particular, we are interested in how residence in different types of city neighbourhoods affects levels of neighbourhood satisfaction?

The discussion that follows will present an empirical analysis of the effect of the social and physical context of the neighbourhood on the satisfaction of residents in Edmonton, Alberta. This analysis will focus on the importance of both types of environments because urban research has historically emphasized the relationship of the social and cultural components and satisfaction and minimized the importance of the man-built environment (Popenoe, 1977).



The purpose of this thesis will thus be to evaluate and interpret the satisfaction levels of people in several selected residential areas. Satisfaction will be measured in relation to neighbourhood attributes consisting of neighbourhood design and density factors, neighbourhood social structural characteristics, housing factors, and level of interpersonal relationships within each neighbourhood.

In order to do so, this thesis will first focus on these attributes and the nature of their association with neighbourhood satisfaction. Secondly, the thesis will explore the complex set of relationships among these factors to determine their relative importance for explaining neighbourhood satisfaction. One advantage of this approach is to offer planners insight as to the opportunity to improve the quality of the physical surroundings and thereby the perceived livability<sup>1</sup> of metropolitan neighbourhoods by their residents.

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<sup>1</sup>Livability is defined as the sum total of the qualities of the urban environment which tend to induce in a citizen a state of neighbourhood satisfaction. These qualities of the environment that contribute toward a positive evaluation may be called factors of livability. Of primary concern in this thesis is the organization of space which "best" accommodates the needs of the residents and minimizes friction and frustration from the factors of the neighbourhood design (Wilson, 1962; Roscow, 1961).





## CHAPTER II

### LITERATURE REVIEW

#### 1. What is Neighbourhood Satisfaction?

In recent years, a considerable amount of literature has appeared that focuses on people's responses to their residential environments. Taken as a whole, this research provides insights into the meaning of residential quality for residents. Before this discussion of what neighbourhood satisfaction is continued, however, we must define the concept "neighbourhood".

This concept has various connotations, ranging from the residential dwelling and its immediate environment to the census tract (Caplow and Foreman, 1955; Zehner, 1971; Burby and Weiss, 1976). One crucial requirement for the meaningful evaluation of neighbourhood satisfaction is to establish what "unit of reference" the resident refers to when he evaluates his neighbourhood. In other words, at what level of analysis do the physical and social structural conditions of the neighbourhood covary with neighbourhood satisfaction?

The research findings of Caplow and Foreman (1955) pointed out that the "block" was the area identified by its residents as the neighbourhood. It generated a definite internal neighbouring structure. Research of Zehner (1971) and Burby and Weiss (1976) validate that finding. They



concluded that the neighbourhood was what the resident can see from his front door--that is, the five or six nearest houses. They argue that this area is that in which most residents have day-to-day experiences. It is the area in which children are raised, in which interaction with neighbours occurs, in which leisure interests are often pursued, and in which home-owners often have sizable investments. For all these reasons residents are bound to have more than a passing interest in this area. Furthermore, Burby and Weiss (1976) explain that:

"Housing and the character of the immediate neighbourhood were major factors in families' decisions to move to both new and conventional communities. In fact, it can almost be said that people do not move to communities...they move to a house and block on which it is located. The reason for households' greater interest in the home and neighbourhood is easily understood...The quality of the home and attractiveness of the neighbourhood in large part determines the soundness of this investment. In addition, while people make use of community recreational, shopping, educational, and health facilities, the greatest proportion of their discretionary time is spent in and around their homes. The home and block are the centers of daily living from which people venture out into the extended community (p. 189)."

These research findings demonstrate then that neighbourhood satisfaction is rooted in the context of the immediate physical and social environment.

In regards to neighbourhood satisfaction, studies of individual neighbourhoods and communities (Hendricks, 1967; Marans and Rodgers, 1975; Lansing et al., 1970; Zehner, 1977; Campbell et al., 1976; Burby and Weiss, 1976) disclosed a list of neighbourhood attributes that are





strongly associated with overall neighbourhood satisfaction. These neighbourhood attributes consisted of safety of the neighbourhood, physical maintenance of the neighbourhood, level of privacy, friendliness of neighbours, quietness, convenience, and perceived similarity by the respondent between himself and the other residents of the neighbourhood. Taken together, these studies generate a multi-dimensional index of neighbourhood attributes, a strong predictor of neighbourhoods that were a very good place in which to live. In addition these neighbourhood attributes did not lose their effect when the respondents' social characteristics were introduced as control variables (Campbell, et al., 1976; Marans and Rodgers, 1975).

These studies for the most part do not investigate what "conditions" create the opportunity for neighbourhood satisfaction. Their results do show, however, that neighbourhood satisfaction has many dimensions or attributes that need to be taken into account if one is to properly evaluate or predict neighbourhood satisfaction.



## 2. Predictors of Neighbourhood Satisfaction

### **a) Neighbourhood Interaction**

Previous research has placed particular emphasis on the importance of compatibility of neighbours for the prediction of neighbourhood satisfaction. Gans (1961), however, argues that the planner has only limited influence over social relationships. As he states:

"Although the site planner can create the propinquity he can only determine which houses are adjacent. He can thus affect visual contact and initial social contacts among their occupants, but he cannot determine the intensity or quality of the relationship. This depends on the characteristics of the people involved (P. 139)."

This contradicts Whyte (1957), who concluded that where one lived on a residential block has the power to determine the nature of intensity of people's social lives.

A number of studies have demonstrated that design factors can actually independently influence neighbouring activity. Hendricks et al., (1967) suggest that lower dwelling-unit density, and hence less propinquity, is significantly associated with neighbourhood interaction. He found that both interaction with neighbours and perception of neighbours as friendly tend to be enhanced when privacy from neighbours is adequate. In addition, Lansing (1970) found that single family neighbourhood residents are more





likely to know all of their half-dozen closest neighbours by name than townhouse residents.

Lansing (1970) suggests that the need for anonymity in denser neighbourhoods reflects a desire for insulation from one's neighbours which, because of propinquity of the neighbours one does know, can be maintained only imperfectly. In other words, physical proximity often compels a person to create social distance in order to retain a minimum of privacy. Particularly in the densest neighbourhoods (greater than or equal to 4.5 dwelling-units per acre), only 8% of the residents knew all the adults in the "half dozen families" living nearest to them by name, compared to almost two-thirds of the residents in the least dense neighbourhoods (less than 4.5 dwelling-units per acre). Amount of interaction with neighbours was not as affected by density as by number of neighbours known.

In this regard, Lansing (1970), also found that individuals living in single-family-units in cul-de-sacs knew more neighbours by name than in linear arrangements, and had a greater amount of social interaction. Once again the location of townhouses (linear or enclosed) made little difference on number of neighbours known.

One explanation of Lansing's findings is that neighbouring patterns over small distances require less homogeneity, as measured by age of friends, occupation of head of household, and income (Anthanasίου and Yoshioka, 1973). Mere exposure to close neighbours could generate,



over time, a more positive attitude and allow friendship patterns to form based on propinquity.

A corollary of this hypothesis follows the lines of Zajonc's theory (1968) of attitudinal effects of mere exposure. Propinquitous relationships involving continued visual and social interaction may serve to increase the intensity of friendship and reduce the number of mere acquaintances.

Furthermore, Lansing et al., (1970) contends that attitudinal factors concerning the neighbourhood--such as quietness, safety, and so forth--are most salient in defining neighbours as both friendly and similar. In other words, the more positively the neighbourhood is evaluated, the more likely that neighbourhood interaction will occur and the more likely one sees his neighbours as being similar. This, in turn, predicted neighbourhood satisfaction.

In regards to the relationship between neighbourhood interaction and traffic flow, Appleyard and Lintell (1972), found that the ability to establish casual acquaintanceships with neighbours in the street was affected by the amount of traffic flow through the neighbourhood. Neighbourhoods with heavy traffic flow led to a decreased conception of secondary territory or "turf" around the dwelling-unit, which would deter social interaction; conversely, neighbourhoods of light traffic flow had greater secondary territory which included the sidewalk, allowing neighbouring



activity to occur.

From the research cited on neighbourhood interaction, it appears probable that neighbourhood satisfaction will increase as neighbourhood interaction increases, which in turn is affected by the evaluation of neighbourhood attributes where the residents live.

We can therefore propose, that:

Hypothesis 1: Levels of neighbourhood satisfaction will be directly related to the amount of interaction found within the neighbourhood.

## **b) Density**

The city has been traditionally defined as a high density settlement. It is the high density aspect of city life that seems to be regarded as the cause of social pathology (c.f. Wirth, 1938; Simmel, 1950; Milgram, 1970).

While there is no widely accepted definition of what is an overcrowded neighbourhood, there are a number of density measures that may capture the degree to which people are or are not separated from other people. The approach of this thesis is not really to determine what should be considered a crowded neighbourhood. Rather, it examines whether higher densities are associated with shifts in neighbourhood satisfaction.





The concept of density has a number of referents that may be related to neighbourhood satisfaction. These referents relate to the conditions within the residential unit or external to the unit. Each one involves different physical dimensions and the separation of people (Michelson, 1970; Gillis, 1975). We assume that the degree to which people are separated is related to crowding, which in turn can generate an excess of social demands on neighbourhood residents. Crowding, is a situation that is characterized by the inevitability of control between persons to control the presence of others (Hughes and Galle, 1979). A crowded household or neighbourhood could upset the residents daily activities for their privacy may be intruded upon. It follows that the way in which people are separated within a particular neighbourhood or dwelling unit could lead to stimulus overload (Milligram, 1970) and preclude the achievement of neighbourhood satisfaction.

Because of the strong association between neighbourhood satisfaction and dwelling-unit satisfaction one objective measure of density that concerns the spatial dimensions of the dwelling-unit and the separation of the members of one household will be tested. This measure, internal density, refers to the number of persons per room within a dwelling-unit.

In regards to internal density, Zehner (1977), found that complete satisfaction increased from 18% of the respondents living in homes with less than one room per



person to 59% for those living in units with three or more rooms per person, regardless of house type and ownership status. More specifically in relation to neighbourhood satisfaction, amount of household space was found to be one of the strongest determinants of neighbourhood satisfaction (Zehner, 1977) and also as a reason for moving from the neighbourhood (Rossi, 1955; Burby, 1976). Hughes and Galle (1979) found that lack of privacy was positively related to increasing levels of internal density, and that people per room was a good objective measure of crowding.

Since we are interested in considering the relationship between density and neighbourhood concerns, our primary interest will be to investigate density measures that relate to the physical neighbourhood and the separation of the residents of one building from the residents of other buildings, and the separation of individuals or households from each other when they are outside their dwellings. This measure of density is called external density (Michelson, 1970). It refers to how many people live in a certain amount of residential area, i.e., a population density measure external to the unit.

Baldassare (1979) found that neighbourhoods where the external density was greater than or equal to 25 persons per residential acre resulted in upkeep being less favourable even when accounting for the social structural characteristics of the residents. He also found neighbourhood noise increased, and perceived safety of the





residents decreased as external density increased, and remained strong after social structural controls were introduced.

Much of the research on residential environments has focused on the relationship between building density measures and neighbourhood satisfaction. Building density is seen as an objective measure of the reality of multiple-family living, the buildings per amount of residential area external to the unit. The buildings represent different arrangements of space with different designs, which vary as to the relative degree of separation of one household from other households.

Studies of different neighbourhood building densities by Lansing et al., 1970, show little systematic effect as to overall neighbourhood satisfaction with number of dwelling-units per acre. Only residents living in the least dense areas, under 2.50 dwelling-units per acre rated their neighbourhood noticeably higher, while, it was noticeably lower for those in the most dense neighbourhoods, greater than 12.5 dwelling-units per acre.

In regards to neighbouring, Tallman and Morgner (1970) pointed out that a higher ratio of single to multiple family units, amount of shared common space, and relative isolation in the suburbs may promote more home and family centered activity. Yancey (1971) would agree. He found little neighbouring in family apartments; the informal social network that provides a modicum of child protection and



control lacks suitable semi-public space, such as front lawns, sidewalks and driveways in which neighbourhood interaction may develop.

Moreover Lansing et al. (1970) and Burby (1976) found that different factors were related to neighbourhood satisfaction at different density levels. In high density areas (those greater than or equal to 4.5 dwelling-units per acre), the adequacy of outdoor space for family activities became important. In low density areas (less than 4.5 dwelling-units per acre), the adequacy of investment value of the home became more important. An implication of this research is that, at higher density, the presence of external privacy or at least semi-private space may encourage neighbouring and/or neighbourhood satisfaction.

These studies show that the need for adequate outdoor space--either private or semi-public--is necessary for neighbourhood satisfaction at least at higher density levels. These studies give support to the assumption that neighbourhood satisfaction can be affected by the spatial organization of the neighbourhood for those in higher density neighbourhoods. A higher success rate for neighbourhood satisfaction is more likely apparently where the physical environment creates the opportunity for the provision of semi-private outdoor space, which is related to the way in which people are separated in space, and affects how successfully residents can cope with the neighbourhood environment.



From the research cited, it appears that building density, which captures to some extent the physical residential structure of the neighbourhood, does play a role in affecting neighbourhood attitudes.

We can therefore propose, that:

Hypothesis 2: Neighbourhood satisfaction will be inversely related to the level of building density found within a neighbourhood.





### c) Conformity with the Neighbourhood Unit Concept

It is quite possible that the street pattern along with other physical elements that make up the neighbourhood may create the opportunity for neighbourhood satisfaction.<sup>1</sup> There are two basic neighbourhood design types, the conventional grid system and the neighbourhood unit concept. Both have been empirically investigated as to their relative ability to provide the opportunity for neighbourhood satisfaction.

The neighbourhood unit concept, first described by Clarence Perry, (1929,1939) has dominated planning ideology in North America since its inception. This concept employs a physical planning technique for integrating a neighbourhood as a self-contained and socially homogeneous unit. In the ideal unit, schools, churches, libraries, a community center, and other facilities and social services are located near the center of each unit. Access to facilities is made easier through the provision of an internal path system. The neighbourhood unit concept also requires the preservation of a considerable amount of land for neighbourhood parks and playgrounds. In order to increase safety, through traffic does not pass through residential neighbourhoods. Instead, main arteries are located on the boundaries of the neighbourhood. Interior street patterns are designed and

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<sup>1</sup>Physical element(s) refers to physical characteristics of a given neighbourhood, their type and number of elements and their mode of combination that form a neighbourhood design.



constructed through the use of cul-de-sacs, curved layout and light-duty surfacing so as to encourage a quiet, safe, low-volume traffic movement and preservation of the residential atmosphere.

On the whole, it was hoped that the formulation of the neighbourhood unit concept would produce a more rewarding life: first, because the neighbourhood unit concept was expected to awaken citizen involvement in local communities and reinstate the neighbourhood as the center of political reform on civic matters, and second, because the neighbourhood unit concept would foster the return of the neighbourhood as a primary group or informal institution of social control.

The expectation that the neighbourhood unit concept would produce a life-style of "localism" as envisioned by Perry appears to have been both naive and overly optimistic (Wirth, 1938; Webber, 1963; Zehner, 1977). However, other aspects of the neighbourhood unit concept--in particular, quality of life in new community neighbourhood units, as compared to that in more conventional neighbourhoods--have been investigated.<sup>1</sup>

Zehner (1971, 1977) focusing on questions of

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<sup>1</sup>The new communities are based on a design whose planning characteristics are similar to Perry's neighbourhood unit concept. These communities had pedestrian and vehicular traffic separated, clusters of homogeneous housing types surrounded by open space, and so forth. Conversely, conventional communities are typically less planned, with fewer innovative planning characteristics, less facilities, and services. Both sets of communities studied had similar characteristics in relation to housing age, cost, and type.





neighbourhood satisfaction, found support for Perry's neighbourhood concept. Zehner found that satisfaction was significantly higher, (if only 4 or 5 percentage points), for new community residents than for residents of conventional communities. He found that neighbourhood unit residents were more likely to rate their neighbourhood as "excellent", to recommend it as a particularly "good place to live", and to think that it would be a "better place to live" in the future.

Focusing on the relative importance of neighbourhood attributes that predict neighbourhood satisfaction, Zehner (1977) found that physical maintenance of the neighbourhood was the single most important predictor of neighbourhood satisfaction regardless of neighbourhood type. This finding parallels that of other researchers (Hendricks, 1967; Lansing, 1970; Marans and Rodgers, 1975; Campbell et al., 1976) and serves to emphasize the likelihood that the planner-developer will be able to significantly increase the resident's level of neighbourhood satisfaction if he is able to design residential areas for ease of maintenance.

Zehner (1977) isolated other neighbourhood attributes that are significantly related to neighbourhood satisfaction independent of neighbourhood type or house types. He found that the following neighbourhood attributes, in decreasing order of importance, were significant predictors of neighbourhood satisfaction: convenience of the neighbourhood, sufficiency of privacy, perception of one's



neighbours as friendly, safety of the neighbourhood, perceived similarity between oneself and one's neighbours, perceived crowdedness of the neighbourhood, and quietness of the neighbourhood. Other concerns of the community included the issue of police protection and safety from crime. These findings parallel that of earlier research undertaken by Lansing et al. (1970), Marans and Rodgers (1975), and Campbell (1976).

Among different community factors that conceptualize the important predictors of neighbourhood satisfaction, Burby and Weiss (1976) found none that were significantly different when he compared conventional communities with new communities. Zehner (1977) found that new communities were given higher ratings in regards to neighbourhood convenience and maintenance. These results account for the small margin of difference between conventional and new communities in regards to overall neighbourhood satisfaction.

In a study done in Holland, Jaanus and Niewenhuizse (1978) were able to determine, using a factor analytic technique, an appraisal factor that was strongly correlated to a respondent's willingness to live in a given residential area. This research investigated a more careful delineation of neighbourhood residential "conditions" that need to be achieved to create the opportunity for neighbourhood satisfaction. In particular, this study determined what types of privacy are necessary for achieving neighbourhood satisfaction. These findings provide information as to where



different types of territory and their boundaries need to be achieved for neighbourhood satisfaction as a whole. For instance, all forms of privacy are presented in this dimension; the study investigated visual privacy (Do you think privacy would be invaded by neighbours and passers-by?), auditory privacy (Do you think one's neighbours will be a source of noise annoyance in this area?), territorial privacy (Do you think this area provides enough private space around the house?). Other aspects of the appraisal factor pertain to the structure of the area: degree of crowdedness (What do you think of the spatial design of this area?), privacy from traffic (Would you expect much nuisance value from traffic on the street?), and four factors related to quality of the dwelling (age of area, house's level of construction, house quality in area, and value of houses in the area).

The correlation between the appraisal factor and willingness to live in a given residential area was 0.90. In a comparable study, Zehner (1977) was able to explain 56% of the variance in the prediction of neighbourhood satisfaction with only eight neighbourhood attributes (described on page five). Other research that relates design elements to aspects of privacy include Appleyard and Lintell (1972), and Lansing (1970).

Regarding traffic activity in a neighbourhood, Appleyard and Lintell (1972) found that, as the traffic-flow through a neighbourhood increased from an average of 2,000





vehicles over twenty-four hours to 15,750 vehicles, little or no sidewalk activity occurred except as a means for moving between the sanctuary of the individual home and the outside world. Moreover, one's conception of primary territory, which extended into the street for those living in light traffic flow areas, dropped to the confines of the dwelling-unit for those living in the heavy traffic areas.

A comparison between specific road design characteristics of neighbourhood units and conventional neighbourhoods and overall neighbourhood satisfaction was done by Lansing in 1970. Working with aerial photographs and plat maps of communities, he distinguished five types of single-family and townhouse neighbourhoods. In single-family areas, neighbourhoods located at the end of cul-de-sacs or dead-end roads were coded as having a "cul-de-sac" site arrangement. Other single family neighbourhoods, like those on both sides of a through street, were coded as having a "linear" arrangement. In townhouse areas, neighbourhoods that included only one building, often facing on a throughfare, were coded as "single structure, linear". Townhouse neighbourhoods consisting of more than one building whose entrances faced on a common area not open to public through traffic were coded as "multiple structure, enclosed". The final townhouse neighbourhood is the "multiple structure, open". This is where two or more propinquitous buildings in the neighbourhood have entrances opening into different public spaces or streets, rather than



onto a common "enclosed" area.

His results indicated that the single-family cul-de-sac, where there is less traffic, rated the most quiet type of residential setting, with the least quiet and most lacking in privacy, being the single structure, linear townhouse. In addition to these research findings, Burby and Weiss (1976) support the notion that the cul-de-sac setting is an important correlate of residential satisfaction. Further findings by Lansing (1970) are that, hearing one's neighbours is a more frequent consequence of townhouse living, with the site plan having little or no effect on frequency of hearing neighbours.

Lansing (1970) found all townhouse residents, with the exception of the single-structure linear design, felt that they had as much privacy in their yards from neighbours as residents in single-family-units. The one exception may be due to the fact that the linear site plan townhouse usually faced onto a public street.

Cul-de-sac neighbourhoods, where there is less traffic, allow for the use of streets for play area. Such streets are more favourably rated as play areas than are streets in linear-design neighbourhoods.

Zehner (1977), Burby and Weiss (1976), and Jaanus et al., (1978) found that the provision of a range of neighbourhood facilities did not increase residential satisfaction. If anything, neighbourhood satisfaction was reduced if the concentration of facilities in an area was so



great as to lead to increased vehicular activity. However, the research of Zehner (1977) and Burby and Weiss (1977) showed that convenient access to recreational facilities increased neighbourhood satisfaction.

Although Perry did not plan his neighbourhood principles to incorporate different types of territory--primary, secondary, and public--Lansing, Appleyard and Lintell found that the physical elements that parallel the interior street design of the neighbourhood unit concept were found to have a significantly higher level of neighbourhood satisfaction than linear structure neighbourhoods. This means two things: First, it seems appropriate to conclude that the man-built environment plays a role in affecting neighbourhood attitudes. It has been shown that the physical elements of a given neighbourhood can severely limit the opportunity for neighbourhood satisfaction, if its elements adversely affect the separation of people from other people, and social activities outside his dwelling-unit.

These physical elements must be conceptualized as being socially relevant. The neighbourhood design affects the social organization of the neighbourhood with respect to its privacy and general physical upkeep. If the "order of neighbourhood elements" leads to the loss of privacy and upkeep, this should be viewed not only as a disturbance but as a source of constraints that directly affect a person's attitude.





Neighbourhood satisfaction also depends on the nature and number of physical elements, as well as their combined effects on individual neighbourhoods. These structural features and their arrangement are requisites for the way in which the social organization of the neighbourhood is generated. The specific physical environment--its elements and their arrangement--represents a system that varies from neighbourhood to neighbourhood in its ability to provide the opportunity for neighbourhood satisfaction. The way in which people respond to the arrangement of their residential environment will therefore affect neighbourhood satisfaction.

Secondly, neighbourhoods that incorporate at least to some degree some of the physical elements of the neighbourhood unit concept will create the opportunity for neighbourhood satisfaction as a whole.

Generally speaking, the fact that Zehner and others found that planned neighbourhoods based on the neighbourhood unit concept were found to have a significantly higher level of satisfaction than their counter-part conventional neighbourhood adds credence to this conclusion.

We can therefore propose that:

Hypothesis 3: Neighbourhood satisfaction will be directly related to the degree of conformity with the neighbourhood unit concept.



#### d) Social Structural Characteristics

The fact that one lives in an area and shares experiences with other neighbourhood residents means that the underlying social structural characteristics of the neighbourhood may be more strongly related to neighbourhood satisfaction than individual level measures. The social structure of the neighbourhood may affect individuals so as to generate differences in attitudes above and beyond those differences created by personal traits. This helps to explain why individual socio-demographic factors are not found to be as strongly related to neighbourhood satisfaction as are specific neighbourhood attributes (Hendricks, 1967; Zehner, 1977; Burby and Weiss, 1976; Campbell, Converse, and Rodgers, 1976; Marans and Rodgers, 1975). Overall the strength of the relationship between personal characteristics and neighbourhood satisfaction has been found to be slight, with the strongest correlation being 0.24 between life-cycle-stage and neighbourhood satisfaction (Campbell et al., 1976). Altogether the six personal characteristics used in their analysis (life-cycle-stage, race, length of residence in the area, income, education, and job status) explained only 8% of the variance in neighbourhood satisfaction.

The specific introduction of socio-demographic factors as contextual variables suggests that the social context of the neighbourhood could substantially affect the social



organization of the area by the way in which different groups of residents define and use their home block. The social structure of the neighbourhood can, therefore, affect the degree of social integration of the neighbourhood.

One measure of integration that has been extensively investigated is mobility. It was assumed that neighbourhoods whose residents are stable are likely to be characterized by a high level of social integration. Mobile neighbourhoods with their continuous turnover of residents are characterized by anonymity, which in turn create the opportunity for deviant behaviour and so on (Boussard, 1935; Park and Burgess, 1925; et al.).

Many of these studies suffered from the problem of the ecological fallacy. They have incorrectly generalized their findings to the level of individual behaviour. For example, studies dealing with residential mobility have reported that mobile areas have a larger proportion of childless couples and single persons (Park and Burgess, 1925). But, it was shown by Rossi (1955) that all household types within mobile areas are highly mobile, and that mobility was a characteristic of the area itself rather than a function of the composition of the households found there. Even so, the use of neighbourhood or areal measures of any kind is still highly interpretable and meaningful for social research (Menzel, 1950; Blalock, 1961).

Mobility is a fairly visible social phenomenon and the direct perception of mobility as a neighbourhood quality may





change the attitudes of other members of the neighbourhood in the immediate area.

A second measure of integration is ownership. Without exception previous residential studies have shown that renters are considerably more mobile and less committed to their neighbourhoods than owners (Zehner, 1977; Burby and Weiss, 1976; Rossi, 1955; Campbell et. al., 1976). Furthermore, a comparison of "renter" and "owner" households showed that friendliness of neighbours, safety, and degree to which neighbours were like the respondents were significantly higher for those who own their dwelling. Clearly, people in neighbourhoods typified by home ownership are likely to feel more comfortable about their neighbours than people in less settled accommodations (Michelson, 1970; Rossi, 1955).

Stage in the life cycle is a strong determinant of the social needs of a household (Rossi, 1955), and therefore people will select neighbourhoods that can accommodate these needs. More specifically, it has been found that young married couple with a number of unmarried children at home are more dependent on the immediate external environment and household space than an older couple with no children at home (Martin, 1956; Rossi, 1955). Moreover, younger couples with children represent the stage in the life cycle where the greatest amount of change in housing needs occur, and because of this, these families are more inclined to move more often than any other stage in the life cycle (Rossi,



1955; Marans and Rodgers, 1975).

Our final socio-demographic variables are level of education and level of income. These variables have as their conceptual referent the life-style and social class of the residents in each neighbourhood. Since education is a process that inevitably affects taste, standards of judgement, and the like, it may affect where residents prefer to live. These life-style variables could affect the way in which the residents evaluate their neighbours (Fried, 1961; Gans, 1961); this could affect neighbourhood satisfaction.

We can therefore propose that:

Hypothesis 4: Neighbourhood satisfaction differences between different residential environments are accounted for by the underlying social structural characteristics of each neighbourhood.

#### e) Housing Satisfaction

Neighbourhood satisfaction is also related to satisfaction with housing. This suggests that the dwelling-unit is situated in the context of the neighbourhood. Neighbourhood and housing can be thought of as being "nested" in the same environmental realm (Campbell, 1976) and therefore, there should be a substantial



relationship between satisfaction levels for each. It has been established, (Campbell, et al., 1976), for example, that some features of the residential situation such as outside private space might well raise people's sense of satisfaction not only with their particular house but also with their neighbourhood.

It is also evident that the residential dwelling like the immediate neighbourhood, typically represents the area in which residents have day-to-day experiences (Burby and Weiss, 1976). Their impressions of the dwelling-unit could, therefore, influence their overall satisfaction with the neighbourhood.

On the basis of simple correlation analysis, Zehner (1977) found that overall housing satisfaction was correlated with the availability of private outdoor space, and measures of privacy in the immediate neighbourhood and so on. Burby and Weiss (1976) support this conclusion. They found that dwelling-unit satisfaction was one of the main determinants of satisfaction with the neighbourhood; conversely, moving away from one's neighbourhood was predicted by the level of dissatisfaction with one's dwelling-unit and neighbourhood (Zehner, 1977; Burby and Weiss, 1976; Rossi, 1955).

We therefore propose that:

Hypothesis 5: Neighbourhood satisfaction will be directly related to the level of housing satisfaction in the neighbourhood.





## CHAPTER III

### RESEARCH DESIGN

#### A. The Sample

In view of the nature of our research interests, the most appropriate research design for this study is the non-experimental design. The literature on user studies and the study of neighbourhood and dwelling-unit satisfaction stress the use of social surveys to gather information on the subjective states of residents in evaluating perceived "quality of life" (Zehner, 1977; Marans and Rodgers, 1975). Available resources and adequate facilities made this approach feasible.

The data used in this thesis were collected in an amalgam study conducted by the Population Research Laboratory (P.R.L.), University of Alberta in March and April, 1977. The sample was selected from the total population of Edmonton, Alberta; the data collected represented the first year of a series of collections by the P.R.L. which are known as the Edmonton Area Studies.

The design for the E.A.S. sample was carefully undertaken. The unit of analysis for the selection of the sample was the individual household with a telephone registered in the current Street Address Directory. It was determined that this directory provided the most complete



and current source of information since less than 10% of the households were missing from this listing.

In a family household, either a husband or wife was eligible for interviewing while in a non-family household, any member who was over 18 years of age was eligible. In the first 33% of the interviews the male was the respondent; thereafter either the male or female of the household was interviewed. This procedure ensured that an equal number of male and female respondents were interviewed.

Given an anticipated completion rate of 80%, (320 interviews), this necessitated that the original sample of four hundred had to be identified for a sampling fraction of three in a thousand households. A multi-stage cluster design with stratification, probability proportional to size, and equal probability of selection of each household was used. The procedural rationale was as follows:

1. All 1971 enumeration areas (E.A.'s) were identified and all nonresidential E.A.'s were excluded. These E.A.'s were then stratified by deciles according to average family income. In other words, the first stratum was identified so as to contain 10% of the E.A.'s with the lowest average family income, and so on. An additional stratum of "new" E.A.'s was also selected. One-tenth of the E.A.'s in each stratum were then randomly selected with the probability proportional to size, that is, an E.A. with twice the number of households of another E.A. was given twice the chance of being selected. This sampling method led to a cluster of



E.A.'s within each stratum that were widely scattered throughout the Edmonton area.

2. The number of interviews assigned each stratum was determined according to the proportion of the population in that stratum. If a stratum contained 9% of the households then it was assigned 9% or 36 of the 400 interviews. The households to be interviewed were divided equally among the clusters chosen to represent the stratum. If the cluster contained 6 E.A.'s then each E.A. was assigned 36 divided by 6 or 6 interviews. The households to be interviewed from each E.A. were chosen systematically from the July 1976 Edmonton Street Address Numerical Directory by taking a random start and selecting every  $j$ th household where  $j$  is the total number of households in the E.A. divided by the number of households selected.

By using a multi-stage cluster design with stratification over the total population of Edmonton it is possible to collect a sample that is homogeneous with respect to strata, (determined by income). This design, however, leads to clusters of E.A.'s within each stratum that are widely scattered throughout the Edmonton area. This procedure allows detailed study of a variety of physical elements and links them to attitudinal responses of the residents. These physical elements are emphasized in this research because they are fundamental to neighbourhood planning and will likely continue to be important.

Fifteen interviewers were hired and given extensive





training. The training session for interviewing was held early in February of 1977. The interviewers were briefed as to the nature of the study and its objectives. Following this, they were shown a video tape of a simulated interview session.

During the afternoon the group was divided into smaller groups in which each interviewer had the opportunity to do an interview with other group members. After each practice interview the interviewer was given feedback on his performance by the other members in the group.

Finally, the interviewers were given the names of respondents who had received introductory letters in advance of the first interviews. This letter explained to the respondent the nature of the study, that he or she was under no obligation to participate in the survey, and that all results were confidential. The interviewers reported that they felt this letter enhanced the response rate which included 341 (85.25%) completed interviews out of a total sample of 400.



## B. Measures

### **1. Dependent Variable**

#### Neighbourhood Satisfaction

The concept neighbourhood was operationally defined in the questionnaire by the following: "Now I have some questions about this immediate neighbourhood, that is the ten or fifteen homes nearest to yours/or the apartments in this building and the area around this building." Taken as a whole, the studies by Zehner (1977) et. al., outlined in the second chapter indicate that there are a number of specific neighbourhood attributes that are strongly associated with neighbourhood satisfaction. These attributes include the safety of the neighbourhood, level of privacy, quietness, convenience, physical maintenance of the neighbourhood, friendliness of the neighbours, and perceived similarity by the respondent between himself and the other residents of the neighbourhood.

To try to capture the multi-dimensional nature of satisfaction, we constructed a satisfaction scale that operationally defines neighbourhood satisfaction. The items



used to measure this variable that relate as nearly as possible, based upon face validity, to these findings are from question 23, 26, and 40.<sup>1</sup> The criteria used to answer these questions was: "To what extent are any of the following problems in this neighbourhood?" The items were:

1. noisy neighbours (coded, 1=major problem, 2=minor problem, 3=not a problem);
2. vandalism (coded, 1=major problem, 2=minor problem, 3=not a problem);
3. traffic (coded, 1=major problem, 2=minor problem, 3=not a problem);
4. safety satisfaction (coded as a Likert scale from 1 to 7, with 1 equal to very dissatisfied, and 7 equal to very satisfied).

The final question used to construct the scale is question 40. The item is: relations between public and police (coded as a Likert scale from 1 to 5, with 1 equal to very good and 5 equal to not good at all).

These five items were recoded, given equal weighting, and combined as a measure of neighbourhood satisfaction. To maintain the units of item four (safety satisfaction) in order to make the dependent variable easier to interpret, all five items were first standardized. Then, the variance from both the index (items 1,2,3 and 5 above) and item four were added together. The standardized items of the index and item four were then added together. Finally the standard

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<sup>1</sup>Appendix one contains the household survey used to collect the data for this thesis.





deviation of item four was multiplied by the standardized total of all five items combined. In this way, the metric of item four is the basis of the scale of neighbourhood satisfaction. Neighbourhood satisfaction has values which range from 2 to 7, with the highest score the greatest level of neighbourhood satisfaction. The reliability of the measure, based on Cronbach's (1951) alpha, a measure of internal consistency is .3825. The reliability of this item is not high.<sup>1</sup> Because of this we expect correlations between this scale and other variables to be attenuated, since the general effect of low reliabilities is the attenuation of correlations (Bohrnstedt, 1970).

On the other hand, the computation of a multi-item scale of five items will have less measurement error than if only one item were used as an indicator of neighbourhood satisfaction (Nunnally, 1967). The reduction in measurement error is crucial if our concepts are to be valid. To illustrate this empirically, a canonical correlation analysis was run between two different dependent variables,

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<sup>1</sup>As is often the case, secondary analysis of the data set leaves something to be desired. The five scale items used in the construction of neighbourhood satisfaction do not adequately capture the domain of the concept. Although the scale was constructed only after the literature was reviewed to determine how various authors have operationalized the concept, and thus increase content validity, not all the items were included in the sample survey used. Furthermore, the low reliability indicates that scale items do not represent a single dimension. A better approach would be to develop separate scales for each dimension that makes up the scale neighbourhood satisfaction. Several items could be formulated to capture the meaning associated with overall safety, privacy, and so forth. This would help generate more valid measures and allow each scale generated to be separately tested with the set of independent variables.



the multi-item index and one global item (question 24) dealing with overall neighbourhood satisfaction, with our set of independent variables outlined in the next section. The one item should have a larger proportion of measurement error than the index, and any linear combination that best accounts for our two different dependent variables should have a much higher eigenvalue with the independent variables than the single item. A significant difference was found; the amount of variance accounted for by our canonical variate from the one item was only .326, while it was .623 for the index. When several items are combined into an index a more valid measure of neighbourhood satisfaction can be achieved than by using a single item.<sup>1</sup>

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<sup>1</sup>The Neighbourhood Satisfaction Index has a mean of 5.470 and a standard deviation of 0.873. This indicates that the distribution is negatively skewed (-1.524). This number is not inordinately large and indicates that the index has less measurement error than the use of only one item as the dependent variable.



## 2. Independent Variables

### a. Neighbourhood Interaction

From the discussion in Chapter Two it is quite plausible that closer ties with neighbours are associated with neighbourhood satisfaction. The concept neighbourhood interaction was theoretically defined as the amount of interaction or knowledge about ones' neighbours. The questions used to measure this concept are:

1. number of adults known (coded, 1=all of them, 2=almost all, 3=more than half, 4=about half, 5=less than half, 6=almost none, 7=none) (question 27);
2. chat with neighbours (coded, 1=daily/almost daily, 2=1 - 3 times a week, 3=1 - 3 times a month, 4=less than once a month, 5=never) (question 28).

These two items were recoded appropriately, given equal weighting, and combined as a measure of neighbourhood interaction. The reliability of the measure, based on Cronbach's (1951) alpha is 0.5862. This item is moderately reliable, and will be used for measuring the effects of





neighbourhood interaction on neighbourhood satisfaction.

#### b. Social Structural Characteristics

From the discussion in Chapter Two it is quite plausible that the underlying social structure of the neighbourhood may be related to neighbourhood satisfaction. The concept mobility was operationalized by the set of variables listed below:

1. the average length of residence in years in each neighbourhood (question 12);
2. proportion of residents who own their dwellings in each neighbourhood (question 13).

We would expect ownership status to be positively related to length of residence in a neighbourhood, which indicates in part ones' commitment to the neighbourhood.

The structure of a household vis-a-vis stage in the life cycle can also affect ones' sense of belonging or commitment to the neighbourhood. The structure of the average household of each neighbourhood was operationalized by the set of variables listed below:

1. the average age of the respondents in each neighbourhood (Question 2).

Our final structural characteristics are life-style and social class. This concept was operationalized by the set of



variables listed below:

1. adding together questions 5 and 6 generated the average level of education of the residents of each neighbourhood;
2. average income of residents in each neighbourhood (question 76).

On the whole, only level of education of the respondents is weakly correlated with each of the other structural characteristics (TABLE 1). As could be expected, level of income is highly correlated with ownership status of the neighbourhood (.5663). Ownership status is also highly correlated with length of residence and age (.7169 and .5273) respectively. Age is also highly correlated with length of residence.

Even though certain social characteristics are strongly correlated, the use of step-wise multiple regression technique will help determine the relative importance of the independent variables. The confounding effects because of the high intercorrelation of some independent variables, however, decreases the reliability of the relative importance indicated by the regression coefficients (Nie et. al., 1975; Blalock, 1973).



TABLE 1

ZERO-ORDER CORRELATIONS WITHIN SOCIAL STRUCTURAL FACTORS

(N=62)

	1	2	3	4	5
1 Proportion of Residents who Own					
2 Length of Resi- dence	.7169*				
3 Average Income of Neighbourhood Residents	.5663*	.2601*			
4 Average Level of Education	-.0803	-.1975	.1755		
5 Average Age of Neighbourhood Residents	.5273*	.6717*	.2060	-.1335	

\*p &lt; .05





### c. Degree of Conformity with the Neighbourhood Unit Concept

In the discussion above we hypothesized that the street pattern along with other physical elements that make up the neighbourhood may create the opportunity for neighbourhood satisfaction, despite the social characteristics of the population under study.

The neighbourhood design can affect the level of integration of the neighbourhood residents in their ability to maintain viable "interrelationships" necessary for neighbourhood satisfaction to be achieved. As we saw in Chapter Two, neighbourhood residents require a certain amount of privacy from their neighbours in order to generate and maintain relatively stable patterns which will help integrate the residents.

The neighbourhood design can affect the level of privacy by the way in which the combination of physical elements that make up the neighbourhood relate to the development of specific types of territory. The type of territory in turn affects the means of obtaining the end of some desired level of privacy. It is important to isolate the physical elements that limit or enhance the opportunity for neighbourhood satisfaction. What are the specific elements that affect the physical separation of people from all other people? Which ones separate the social activities of people outside their dwelling-units? We hypothesized that the neighbourhood elements affect the social organization of



those who share the same neighbourhood contextual environment, and, therefore, directly affect the residential attitudes of its residents.

The above discussion provides a basis for generating a theoretical definition for the concept of the "degree of conformity with the neighbourhood unit concept".

The theoretical definition of the concept 'degree of conformity with the neighbourhood unit concept' must in some way be related to the way dwelling-units and their residents are separated from both persons outside the dwelling-units and from other types of land uses and their associated social activities.

In view of the nature of our definition of the concept "neighbourhood", the most appropriate way of collecting and coding data related to the concept "degree of conformity with the neighbourhood unit concept" would be to classify the immediate area of each house sampled in the survey.<sup>1</sup> Due to lack of time and funding, this procedure was not followed. Instead, an Edmonton Land Use Map of 1976 with each neighbourhood located on it was used to measure and code the neighbourhood context of each area sampled. The actual unit of analysis representing each neighbourhood was its particular enumeration area (E.A.).

The consequence of using a land use map instead of

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<sup>1</sup>The above discussion of neighbourhood context represents the concept of place utility (Wolpert, 1965; Brown and Moore, 1970). The concept essentially reflects an individual's level of satisfaction or dissatisfaction with respect to a given location.



going out into the field and "coding" the context of each house sampled is greater measurement error. Although each house was plotted on the land use map the scale of the map made it difficult at times to get enough valid information about the neighbourhood context of some of the houses in each E.A. Making use of a land use map to gather information about the spatial environment is a novel approach, however, and may be successfully used in a variety of applications for urban research despite this limitation.

TABLE TWO gives a list of the 62 neighbourhoods sampled. Using a millimeter ruler, or by inspection of the land use map, the researchers were able to "measure" each of the land use variables listed below. Seven aspects of neighbourhood design were measured. These objective measures are:

1. Road Type: This variable was computed by counting the actual number of cul-de-sacs and/or crescents within an E.A. that was sampled. If no crescents or cul-de-sacs were present, the E.A. scored a value of zero.
2. Main Streets: This variable was computed by counting the actual number of main streets found either within or bordering an E.A. that was sampled. If none of the sampled dwelling-units in each E.A. are next to a main street, the E.A. scored a value of zero.
3. Open Green Space: This variable was computed by calculating the actual area of green space in square millimeters found within an E.A.





TABLE 2

LIST OF NEIGHBOURHOODS SAMPLED  
BASED ON 1971 ENUMERATION AREAS

CENSUS TRACT	ENUM. AREA	CENSUS TRACT	ENUM. AREA
13	162	31	170
31	164	54	170
43	104	44	153
44	125	44	116
16	52	72	306/304
60	211	53	256/255
23	215	25	118
25	120	34	104
28	201	32	11
33	58	19	57
76	316	47	218
45	169	14	251
40	7	34	101
58	75	41	57
26	62/52	24	101
38	67	49	252
66	363	66	357
10	123	36	360
8	14	90	3
75	305	70	314/309
63	266/265	12	70
30	153	21	204
48	201	78	
22	202/212/207	29	
29	16	51	219
5	26	11	165
15	64/66	61	220
9	2	34	51
12	108/101	2	3/4
7	18/19	69	319
65	367	58	252

(N=62)



4. Open Green Space Per Residential Area: This variable was computed by dividing the area of open space by the residential area (both measured in square millimeters).
5. Commercial Area: This variable was computed by calculating the actual area of commercial development found either within or bordering an E.A. If none of the sampled dwelling-units in each E.A. are next to a commercial area the E.A. scored a value of zero.
6. Neighbourhood Activity: This variable was computed by multiplying the mainstreet variable by commercial area. If either one had a value of zero or one they were added together. This variable was computed for there might be a compounding effect upon neighbourhood satisfaction if residents live in neighbourhoods where both commercial areas and main streets are found together.
7. Grain: This variable is the amount of physical separation of different land uses and their social activities. Each E.A. was scored according to the degree of separation of either different residential dwelling-unit types or the presence of other residential uses such as government institutions, industrial areas and so forth. E.A.'s which had high separation of different residential dwelling-unit types from each other and no other land uses except open green space, schools, and roadways, and very little commercial area were scored a value of three. E.A.'s where different residential types had low separation from one another or



were intermixed were scored a value of one. E.A.'s with either more heterogeneous land types present like government buildings, industrial and so forth, or less separation of different residential types than those coded "three" but more than "one" scored a value of two. Even if the neighbourhood had a number of different land uses specified above, it would still be scored a value of one if the residential area is intermixed.

These variables measure different aspects of the arrangement of land uses found within the 62 neighbourhoods studied in this thesis.<sup>1</sup>

This rather elaborate diversity of operational definitions is partially a result of a lack of previous theoretical specification of which variables are important, or how different variables might be reasonably combined. Since this research is clearly exploratory, we felt it best to retain at the operational level the diversity of meaning suggested at the conceptual level.

The high zero-order correlation (.8184) between open green space and space per residential area represents near redundancy in terms of their conceptual referents, (TABLE 3). In order to avoid any problems with multicollinearity we

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<sup>1</sup> To test the reliability of the operational definition of the variable "grain", the researchers administered the "instructions" that defined this variable to a judge who classified each neighbourhood sampled. The inter-item correlation between the researchers' classification and that of the judge was .927. The operational definition is reliable, and the specific properties of the variable "grain" show a degree of consistency for mapping of the neighbourhoods into the three categories (Blalock, 1968).





TABLE 3  
ZERO-ORDER CORRELATIONS WITHIN NEIGHBOURHOOD DESIGN FACTORS  
 (N=62)

	1	2	3	4	5	6	7
1 Road Type							
2 Number of Main Streets	-.0430						
3 Open Green Space Per Residential Area	.0895	-.1349					
4 Neighbour- hood Activity	-.2459	.5641	-.2101				
5 Grain	.3994	-.4885	.2648	-.5202			
6 Open Green Space	.2825	-.1666	.8184	-.1987	.3175		
7 Commerical Area	-.2879	.3024	-.2259	.8856	-.4473	-.2080	



decided to drop the open green space variable from the analysis, and retain the measure of open green space per residential area. This measure was retained because its conceptual meaning is more broad than just a simple measure of open green space found in each neighbourhood. Instead, open green space per residential area specifies the relative amount of open green space found in each neighbourhood on the basis of residential size.

Similarly the high zero-order correlation (.8856) between neighbourhood activity, and commercial area represented redundancy. The commercial variable was dropped from the analysis and neighbourhood activity was retained. The latter variable has a broader conceptual meaning for it captures the level of neighbourhood activity that may be more meaningful for the prediction of neighbourhood satisfaction than the single measure of amount of nonresidential area.

The remainder of the elements have zero order correlations that are very low or moderately low. Since none of these correlations are inordinately high, we will be able to assess the relative strengths of each of the five neighbourhood elements as independent predictors of the criteria.



#### d. Density

From the discussion in Chapter Two it is quite possible that to the extent that density variables capture the physical separation of both people within their dwelling-units, and households from each other, then these measures may affect neighbourhood satisfaction. Three measures of density were calculated: They are:

1. External Density: This variable was computed by calculating the total number of people per square mile found at the E.A. level.
2. Building Density: This variable was computed by dividing the number of multiple-dwellings by the total number of dwellings-units found at the E.A. level.
3. Internal Density: This variable was computed by dividing the number of people found in each dwelling-unit by the number of rooms in the dwelling-unit.

All three objective density measures have low or moderately low inter-item correlations (TABLE 4). Since none of the variables can be judged to be redundant we will be able to assess the relative strengths of each of the three density measures as independent predictors of neighbourhood satisfaction.

#### e. Housing Satisfaction

The concept of housing satisfaction used here was operationalized by asking residents how satisfied they





TABLE 4  
ZERO-ORDER CORRELATIONS WITHIN DENSITY FACTORS  
(N=62)

	1	2	3
1 Internal Density			
2 External Density	-.0192		
3 Building Density	.1579	.4569	



were with there dwelling-units (question 17). This item is a Likert scale from 1 to 7, with 1 equal to very dissatisfied, and 7 equal to very satisfied.

### C. Plan of the Analysis

From the discussion in Chapter Two a strict distinction between neighbourhood level conceptualization and an individual level as our unit of analysis can be made. The discussion from Chapter Two suggests that the context of the neighbourhood is meaningful as the unit of analysis for the prediction of neighbourhood satisfaction. Only neighbourhood indices of all concepts are used, therefore, all the hypotheses are investigated at the neighbourhood level.

All social statistics are computed at the neighbourhood level. This means that each variable including the criteria will represent average scores of the residents sampled within each neighbourhood. For example, if 5 people are sampled in one neighbourhood and their level of neighbourhood satisfaction is 6,5,4,6,5, then the average score of neighbourhood satisfaction for that particular neighbourhood would be 26 divided by 5 or 5.20. In all, there were 62 neighbourhoods sampled. We therefore have 62 "different" area measures of neighbourhood satisfaction based upon the aggregation of individual scores within each



neighbourhood.

Our research interests involved an investigation of the extent, direction, and strength of the relationship between neighbourhood satisfaction and five factors:

1. neighbourhood unit concept 2. density 3. neighbourhood interaction 4. housing satisfaction and 5. social structural characteristics. Specifically we are concerned with how these factors relate to neighbourhood satisfaction.

Our procedure, in terms of order of presentation, will be to show the simple zero-order correlations between specific sets of independent variables in order to get a better understanding of the content each variable represents. Next, the zero-order correlations of these variables with the neighbourhood satisfaction index will be investigated. Finally, the factors which are most important for neighbourhood satisfaction will be determined using a step-wise regression technique.



## CHAPTER IV

### FINDINGS

#### A. Correlations Between Different Sets of Independent Variables

TABLE 5 shows that both grain and building density are strongly correlated with ownership status (.6336, -.7007 respectively). This supports our contention that owned dwelling-units tend to be found in neighbourhoods which are less crowded. It follows that length of residency and building density should also be negatively correlated. The inter-item correlation of -.569 between length of residency and building density supports this conclusion.

The strong positive correlation between neighbourhood interaction and ownership status,  $r=.5164$  supports the findings of Zehner, (1977) and others that where neighbourhoods are typified by home ownership than residents are likely to feel more comfortable about their neighbours than people in less settled areas.

The nonsignificant correlation between housing satisfaction and grain indicates that although the neighbourhood and house can be thought of as being "nested" in the same environmental realm, the contextual referent for both these variables is different.





TABLE 5

ZERO-ORDER CORRELATIONS BETWEEN SOCIAL STRUCTURAL FACTORS,  
DENSITY, NEIGHBOURHOOD DESIGN FACTORS, HOUSING  
SATISFACTION, AND NEIGHBOURHOOD INTERACTION

	Proportion of Resi- dents who Own	Average Age of Neigh- bourhood Residents	Length of Residence	Average Income of Neigh- bourhood Residents	Average Level of Education
External Density	-.4680*	-.0161	-.2747*	-.2936*	.0549
Building Density	-.7007*	-.4303*	-.5690*	-.3161*	.0643
Internal Density	-.0989	-.2968*	-.1314	-.0230	.0858
Grain	.6336*	.3849*	.4483*	.3662*	-.0616
Number of Main Streets	-.3429*	-.1278	-.3201*	-.1934	.0963
Road Type	.4975*	.0597	.0909	.4775*	.1998
Open Green Space Per Residential Area	.2239	.1473	.1019	.2550*	.3225*
Neighbourhood Activity	-.2858*	-.0567	.2237	-.2353	-.1477
Housing Satis- faction	.0980	.3079*	.0792	.2472*	-.0470
Neighbourhood Interaction	.5164*	.2959*	.4586*	.3852*	-.1513



TABLE 5 (Continued)

	Housing Satis- faction	Neighbour- hood In- teraction	External Density	Building Density	Internal Density
Grain	.1536	.2532 <sup>*</sup>	-.2181 <sup>*</sup>	-.5606 <sup>*</sup>	.0113
Number of Main Streets	-.2569	-.0666	.1982	.3653 <sup>*</sup>	.0776
Road Type	.2967 <sup>*</sup>	.1445	-.2667 <sup>*</sup>	-.2733 <sup>*</sup>	-.0980
Open Green Space Per Residential Area	.2761 <sup>*</sup>	.2795 <sup>*</sup>	-.2985 <sup>*</sup>	-.1420	-.1026
Neighbourhood Activity		.0187	.0086	.3860 <sup>*</sup>	.0770
	Internal Density	External Density	Building Density	Housing Satisfaction	
Neighbourhood Interaction	.1713	-.3402 <sup>*</sup>	-.3210 <sup>*</sup>	.0414	
Housing Satis- faction	-.2900 <sup>*</sup>	.1132	.0166	1.00	

\* = significant correlations at the .05 level (two-tailed test).



## B. Correlations Between Independent Factors and Neighbourhood Satisfaction

TABLE 6 provides a list of ranked correlations with neighbourhood satisfaction. The variables that explain at least ten percent of the variance of neighbourhood satisfaction are given below. Generally, grain shares a fair amount of variance with neighbourhood satisfaction ( $r^2=.282$ ). Ownership status has an  $r^2$  of .213, while housing satisfaction has an  $r^2$  of .198. The proportion of multiple-units and average age of the residents in the neighbourhood have an  $r^2$  of .153 and .145 respectively. Finally, length of residency had an  $r^2$  of .105, and road type had one of .100.

On the basis of the simple correlations between neighbourhood satisfaction and the independent variables, the design variable "grain" had the strongest correlation with neighbourhood satisfaction (.5312). Grain captures the way in which dwelling-units are separated from each other and other land uses, which in turn affects territoriality.

The social structural variables, ownership, length of residence, and age confirm the findings of Rossi (1955) and others that greater social integration within the neighbourhood is positively related to neighbourhood satisfaction. Housing satisfaction being strongly correlated with neighbourhood satisfaction (.4452) confirms that the dwelling-unit is part of the context of the neighbourhood.





TABLE 6

SUMMARY OF VARIABLES UNDER CONSIDERATION  
FOR MULTIVARIATE ANALYSIS

ORDERED BY ZERO-ORDER CORRELATIONS WITH THE  
NEIGHBOURHOOD SATISFACTION INDEX

(N=62)

Variable	Correlation With NSAT Index
Grain	.5312*
Proportion of Residents Who Own	.4613*
Housing Satisfaction	.4452*
Building Density	-.3907*
Average Age of Neighbourhood Residents	.3807*
Length of Residence	.3237*
Road Type	.3168
Average Income of Neighbourhood Residents	.3058*
External Density	-.2678*
Neighbourhood Activity	-.2642*
Number of Main Streets	-.2556*
Open Green Space Per Residential Area	.2407*
Neighbourhood Interaction	.1069
Average Level of Education	.0965
Internal Density	.0562

\*p < .05



The moderately strong correlation between number of multiple-units divided by the total number of units in each E.A. and neighbourhood satisfaction ( $-.3907$ ) shows that greater density is negatively correlated with neighbourhood satisfaction. Furthermore, the strong correlation between grain and this density variable ( $-.5606$ ) means that building density relates in part to the way in which dwelling-units are separated from each other, which in turn affects territoriality.

The lack of a significant association between neighbourhood interaction and neighbourhood satisfaction indicates that neighbourhood satisfaction as a whole is more likely to be influenced by the physical elements of the neighbourhood, and how they relate to maintenance and privacy, than by the extent to which there are close personal ties among neighbours.

### C. Multivariate Analysis of Neighbourhood Satisfaction

In order to characterize the relationship between the dependent and independent variables in the sense of determining the extent, direction, and strength of the association among these variables, we performed a step-wise regression of neighbourhood satisfaction on all the independent variables. The results appear in TABLE 7.

Of a possible fifteen variables that could enter the step-wise regression equation, six variables had significant



TABLE 7

NEIGHBOURHOOD CONTEXT AND NEIGHBOURHOOD SATISFACTION:  
MULTIPLE REGRESSION RESULTS

Variable	B	Std. Error B	F	Standardized B	r
1 Grain	.3772	.119	9.92	.3341	.531
2 Housing Sat- isfaction	.5203	.135	14.92	.3932	.445
3 External Den- sity	-.0214	.008	7.12	-.2725	-.267
4 Internal Den- sity	2.03	.755	7.21	.2850	.056
5 Average Age of Neighbourhood Residents	.0332	.013	5.99	.2809	.380
6 Neighbourhood Interaction	-.1565	.073	4.65	-.2356	.106
Constant	.5377				
R = .723	ANOVA				
R <sup>2</sup> = .523	df				
Se = .634	SS				
	MS				
	F				
	Regression	6	24.33	4.05	10.06
	Residual	55	22.16	.40	

note: all partial regression coefficients are significant at the .001 level.



independent effects on neighbourhood satisfaction. Using an additive model, the six variables of this reduced form equation are: grain, housing satisfaction, one social structural factor, age, two density measures, and neighbourhood interaction. These variables accounted for 52.3% of the variance in neighbourhood satisfaction.<sup>1</sup> Grain, housing satisfaction, internal density and age all had positive effects on neighbourhood satisfaction. Number of people per square mile and neighbourhood interaction had negative effects on neighbourhood satisfaction.<sup>2</sup>

Grain had a substantial positive effect on neighbourhood satisfaction ( $b = .3772 \pm .119$ ). The strong influence of specific neighbourhood types upon neighbourhood satisfaction can be explained by the fact that certain arrangements of elements that make up the neighbourhood context may be more appropriate than others for creating the opportunity for neighbourhood satisfaction. The fact that there is a strong positive correlation between grain and neighbourhood satisfaction (.531) could mean that category three neighbourhoods may be more private neighbourhoods than

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<sup>1</sup> In order to determine if the relationship between neighbourhood satisfaction and our independent variables is linear, we compared its eta-squared (Blalock, 1960) and  $R^2$  for each bivariate (simple) correlation. Eta squared is defined as  $1 - (\text{sum of squares within}) / (\text{sum of squares total})$ . Comparison of  $R^2$  with eta-squared showed no significant difference between the two. Thus, the relationship in our sample is clearly linear.

<sup>2</sup> Using an F test, (Snedecor and Cochran, 1967), the seventh variable level of education did not contribute significantly at the .05 level of significance on the criteria after the effects of all other independent variables were held constant, so it was dropped from the regression equation.





category one neighbourhoods. The major structural difference between neighbourhoods classified under category one and those under category three is the way in which different dwelling-units are arranged in relation to each other and in relation to other land uses present in the neighbourhood. Neighbourhoods classified under category three had a majority of single-family units or low-rise dwellings such as row-housing. These dwellings are more likely to be separated from other dwellings by fencing and sidewalks, all of which serve to establish primary territory (Altman, 1975), which in turn may affect the level of privacy achieved (see appendix 2). Furthermore, the dwellings sampled, for the most part, were separated from other dwelling types by several blocks.<sup>1</sup>

Neighbourhoods classified under category one, on the other hand, had an intermixing of dwelling types, and housing may be located next to a main street or commercial strip. These neighbourhoods have a poorer transition from primary to public territories, which may preclude the establishment of a sufficient amount of privacy for the neighbourhood to be viable (see appendix 2).<sup>2</sup>

It is apparent that the physical environment must be congruent with respect to residents' needs for external privacy free from invasion (Altman, 1975). Although all neighbourhood units were categorized under category 3 of the

-----  
<sup>1</sup>These neighbourhoods referred to could be defined as being coarse grain in design (Lynch, 1958).

<sup>2</sup>These neighbourhoods referred to could be defined as being fine grain in design (Lynch, 1958).



variable grain not all of these neighbourhoods had high levels of neighbourhood satisfaction (see appendix 2). Conversely, several of the conventional neighbourhoods had high levels of neighbourhood satisfaction (see appendix 2).<sup>1</sup>

This means that higher levels of neighbourhood satisfaction are not exclusive to planned neighbourhood units. Both conventional neighbourhoods and planned neighbourhood units can create the opportunity for neighbourhood satisfaction if there is a good transition from primary to public space, which is congruent with residents needs for external privacy.

Housing satisfaction also had a substantial positive effect on neighbourhood satisfaction ( $b = .5203 \pm .135$ ). This finding confirms our prediction, from Chapter Two, that housing satisfaction is an integral part of neighbourhood satisfaction.

The objective density variable, number of people per square mile was the third variable to enter the equation. With grain, and housing satisfaction controlled, the partial regression coefficient for this predictor was ( $b = -.0214 \pm .008$ ). Number of people per square mile ranges from .12 to 60.00 with a mean of 12.50 and a standard deviation of 11.11. The rather large variance and the

-----  
<sup>1</sup>An interesting exercise would be to investigate the homogeneity of individual households within each neighbourhood category. We would expect that there would be less agreement regarding satisfaction for residents in category one than for residents in category three. It would be worthwhile to investigate this and to explain these differences.



moderate unstandardized beta weight suggests that this density measure will have a noticeable effect on neighbourhood satisfaction for neighbourhoods with a large number of people per square mile.<sup>1</sup>

The objective density variable number of people per room was the fourth variable to enter the equation. It is rather unexpected that the relationship between people per room and neighbourhood satisfaction is positive ( $b=2.03\pm.755$ ). This positive relationship is due to a suppressor effect (Conger, 1974; Zelditch, 1975).<sup>2</sup> When housing satisfaction is controlled, internal density turned out to be significantly positively related to neighbourhood satisfaction.

The variable, therefore, that is suppressing the relationship between internal density is housing satisfaction. The simple correlation between housing satisfaction and internal density is moderately strong ( $-.290$ ), while the correlation between internal density and neighbourhood satisfaction is weak ( $.056$ ). Housing satisfaction hides the true effects of internal density upon neighbourhood satisfaction. The relationship means that as

-----  
<sup>1</sup>This describes a non-linear effect, and suggests that the independent variable, external density, should be logged, and introduced in a mixed model design. Future research should consider this type of investigation for threshold effects, especially since Lansing et. al., (1970) found that density has its most substantial "effects" in the most crowded neighbourhoods.

<sup>2</sup>A suppressor variable is defined to be a variable which increases the predictive validity of another variable (or set of variables) by its inclusion in a regression equation. This variable is a suppressor only for those variables whose regression weights are increased (Conger, 1974).





long as the residents are satisfied with their dwelling units then higher internal density does not negatively affect neighbourhood satisfaction.

With grain, housing satisfaction, people per square mile, and internal density controlled, age had a moderate positive effect on neighbourhood satisfaction ( $b = .0360 \pm .013$ ). The preference for neighbourhoods where the average age of its residents is higher may be explained by the lower mobility and increased likelihood of "owner" status associated with older age groups. The strong positive correlation between age and length of residence (.672) supports this finding.

It may equally be the case that greater neighbourhood satisfaction is completely accounted for by the fact that older residents are not as dependent on the immediate external environment and household space as younger residents, since older families have less children at home than younger families. The moderately strong negative correlation between age and internal density (-.297) supports this finding.

A third explanation of the positive relationship between residents' age and neighbourhood satisfaction could be that residents with long-term commitments to an area, previously demonstrated to be a function of residents' age (Edney, 1972), develop a more elaborate boundary-marking system that provides a better transition from primary to public territories. Homes with distinctive territorial



markers such as fences and hedges can create a better transition than relatively unmarked homes.

The correctness of these explanations can only be determined by relating the characteristics of individuals to the context of the neighbourhood design.

The final significant predictor of neighbourhood satisfaction, amount of interaction with neighbours, had a moderately strong negative relationship with neighbourhood satisfaction ( $b = -.1567 \pm .010$ ). The negative partial relationship is suppressed by age, and people per square mile. The simple correlations between neighbourhood interaction and this suppressor is  $-.3402$ . The correlation between neighbourhood interaction and the two suppressors are respectively  $.2959$  and  $-.3402$ . The correlation between neighbourhood interaction and neighbourhood satisfaction is moderately weak ( $.1068$ ). In the regression equation neighbourhood interaction is negatively related to neighbourhood satisfaction. The negative relationship between people per square mile and neighbourhood interaction may be indicating that high amounts of neighbourhood interaction in higher density neighbourhoods may interfere with the respondents needs for privacy through a process of invasion (*ceteris paribus*).

Given that age has a strong positive association with neighbourhood interaction makes sense but the negative effect of neighbouring upon neighbourhood satisfaction in this context does not. The literature, though inconclusive,



says that neighbouring activity may be seen more positively as residents get older (Atchley, 1972).

Taking an overall look at the total variance explained by the reduced form equation (TABLE 8), it explains close to 60% of the variance (57.29%). The design variable "grain" uniquely accounts for 33.92% of the total variance explained, with housing satisfaction accounting for almost the same amount, 33.46%. Taken together, these two factors account for 67.38% of the total variance explained by this equation. These effects support hypotheses three and five respectively.

The proportion of variance explained by the objective density variables internal density and number of people per square mile is roughly half the amount explained by the design variable grain or housing satisfaction, (3.05% and 13.91% respectively). How they affect neighbourhood satisfaction is difficult to understand. It may be that with higher density the land and resources can become heavily congested as many people attempt to conduct their activities. The environment (eg. housing, sidewalks, streets, and parks etc) can become less pleasing aesthetically because of overuse and inability to meet the demand for maintenance. Furthermore, conflicts over scarce resources may infringe upon residents needs for privacy (Baldassare, 1979).

The proportion of variance explained by the social structural variable age is one third the amount explained by



TABLE 8

PROPORTION OF VARIANCE THAT IS UNIQUELY EXPLAINED BY  
EACH VARIABLE IN THE REDUCED FORM EQUATION

	Variance Explained by Individual In- dependent Variables in Reduced Form Equation.	Proportion of Variance Explained by Indivi- dual Independent Vari- ables in Reduced Form Equation.
Grain	17.74%	33.92%
Housing Satisfaction	17.50%	33.46%
Average Age of Neigh- bourhood Residents	10.67%	20.40%
Density;		
Internal 1.60)		3.05)
External 7.28)	8.88%	13.91)
		16.96%
Neighbourhood Inter- action	(-) 2.50%	(-) 4.58%
	<hr/> 52.29%	<hr/> 100.16%





combining the design variable grain with housing satisfaction, 20.40%). Our analysis shows that the neighbourhood and housing design factors substantially effect neighbourhood satisfaction and it is time to turn away from the question of whether the physical environment has effects, to the study of design factors which magnify or minimize these effects.

The finding that neighbourhood interaction is negatively related to neighbourhood satisfaction directly contradicts hypothesis one.



## CHAPTER V

### A. CONCLUSIONS and RECOMMENDATIONS

These findings provide some measure of support for the idea that the neighbourhood context shared by residents can account for differences in opinions of residents within different neighbourhoods. Each neighbourhood represents a potentially different social and physical setting that is associated with the degree of success of generating and maintaining particular social needs. Our data analysis clearly establishes that analyzing the social and physical structure of the neighbourhood can contribute to the prediction of residential preferences. Once a theoretical definition of the concept "neighbourhood" was developed it was possible to generate and test the significance of a number of elements that could affect the social organization of the neighbourhood.

The methodology of this thesis introduced a way to develop objective neighbourhood elements that relate to the subjective evaluation of neighbourhood satisfaction. This approach introduces a way of developing contextual design elements that are sociologically meaningful and allow for the deliberate manipulation of the physical setting for improved residential satisfaction. Attention should now be turned away from the question of whether the man-built



environment plays a role in affecting neighbourhood satisfaction, and toward the question of what design factors maximize or minimize its effects. With respect to contextual elements this thesis provides the following information pertinent to social policy.

### 1. The Role of Neighbourhood Design Factors

It was found that residents prefer to live in neighbourhoods where different residential and nonresidential land uses are separated from each other. Where neighbourhood satisfaction was lower, there was an interspersed of land use types, which create the opportunity for a poorer transition from primary to public territories within the neighbourhood for it to be viable. This finding indicates what the planner or architect should consider when putting together a parcel of land in order to achieve high levels of neighbourhood satisfaction.

The finding that the variable "grain" was more highly related to neighbourhood satisfaction than ownership status of the neighbourhood is important. Contrary to other findings, it was found that the variable "grain", was more highly related to neighbourhood satisfaction, such that the ownership status was not significantly related to neighbourhood satisfaction. This indicates that ownership is not as important as the neighbourhood design for creating the opportunity for neighbourhood satisfaction. The





implication of this is that unless the environment is congruent with respect to households' need for external privacy, free from invasion, ownership alone is unlikely to create highly satisfied residents. Clearly then, ownership is not a sufficient condition for neighbourhood satisfaction.

A second social need that has significant influence on neighbourhood satisfaction is housing satisfaction. It is evident that because the neighbourhood and the house "share" the same environment that there should be a substantial relationship between housing satisfaction and neighbourhood satisfaction.

## 2. The Role of Social Factors

While the design variable, grain, was very important there is no doubt that stage in the life-cycle can influence neighbourhood satisfaction.

The most important social factor significantly associated with neighbourhood satisfaction was a general measure of life cycle stage, average age of the residents, within a neighbourhood. The exact effect of age on neighbourhood satisfaction requires further analysis. Three possible explanations were given. One, that the variable age indicates the residents' degree of commitment to the neighbourhood. Two, that the degree of dependence on the neighbourhood setting for satisfaction varies with the stage



in the life cycle. Three, that the resident can change his or her neighbourhood setting to satisfy individual needs.

### 3. The Role of Neighbourhood Interaction

It was found that neighbourhood interaction had little influence on neighbourhood satisfaction. In fact, neighbourhood interaction was negatively related to neighbourhood satisfaction. This could well mean that neighbouring activity in Edmonton, Alberta does not lead to social integration for citizens have for the most part "communities of interest" that take the place of such activities (Webber, 1963). Furthermore, given that neighbourhood interaction was suppressed by external density indicates that in higher density neighbourhoods, too much neighbourhood interaction may interfere with residents needs for privacy.

### 4. The Role of Density Factors

If we assume that the more people that live in the neighbourhood the greater the demand that is placed on land resources, then any noticeable negative effect of density on neighbourhood satisfaction is only likely to occur in the most crowded neighbourhoods (Baldassare, 1970). As an objective predictor of neighbourhood satisfaction, it has been shown that external density is not as sensitive to



aspects of territoriality, which is strongly associated with neighbourhood satisfaction, as is the objective measure "grain". External density was not as sensitive to neighbourhood satisfaction as a whole even though it has a range from .12 to 60.00, while "grain" had a range from 1 to 3.

### B. Limitations of the Research

One of the major disappointments of this study is that we were unable to gain any insight into the way in which neighbourhood design elements interact with social characteristics. The discussion above has proceeded instead under the assumption that the individual social characteristics have exactly the same influence within every type of design and that the unique effect of the design factors is just an additive increment or decrement. If we had been able to introduce individual measures as covariates, we could have disaggregated the data to the extent to which different individual predictors have effects varying from one neighbourhood setting to another.

This means that urban research should look not only at the way in which a particular environmental factor influences a specific behaviour or attitude, but also at individual social characteristics of the respondent which may interact with one or more of the environmental factors. Covariance analysis and dummy variable regression are two



methods that would allow this type of analysis to proceed<sup>1</sup>

The results of the application of this broader technique would have been theoretically important; the effects of specific "group" variables on the neighbourhood satisfaction of various types of individuals could have been examined.

Finally, a broader basis for prediction or explanation of neighbourhood satisfaction could be achieved by controlling for house type. The literature does show that, depending on the type of dwelling-unit, there are different social needs that must be fulfilled (Zehner, 1977; Burby and Weiss, 1976). This important investigation was not pursued in the present thesis, but would be of great benefit in deciding where different types of residential and non-residential land-uses should be located to create the opportunity for neighbourhood satisfaction.

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<sup>1</sup>.For a lucid explanation of these important techniques see Schuessler, 1969; Cohen, 1968; Fennessey, 1968.





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APPENDIX I  
THE SOCIAL SURVEY



EDMONTON AREA STUDY  
QUESTIONNAIRE

1977

1. Interviewers Name \_\_\_\_\_
2. Interview I.D. No. \_\_\_\_\_
3. Electoral District \_\_\_\_\_
4. Enumeration Area \_\_\_\_\_
5. Your Interview No. \_\_\_\_\_
6. Date \_\_\_\_\_ Time of Interview \_\_\_\_\_
7. Length of Interview \_\_\_\_\_ Minutes.
8. Address Label \_\_\_\_\_

SAMPLE COPY ONLY

9. Appointment Time \_\_\_\_\_
10. No Interview \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_









5. What is the highest grade in elementary school or high school that you finished?

YOU \_\_\_\_\_

YOUR SPOUSE \_\_\_\_\_

IF R OR SPOUSE FINISHED 12th OR 13th GRADE, ASK THIS QUESTION.

6. How many years of post secondary education do you have?

YOU \_\_\_\_\_

YOUR SPOUSE \_\_\_\_\_

*I would like to get some background information about you.*

7. What is your religious preference?

YOU \_\_\_\_\_

YOUR SPOUSE \_\_\_\_\_

8. Would you call yourself a \_\_\_\_\_ (STATED PREFERENCE)  
(Adjective)

Adjective

Strong ..... 1

Not very strong ..... 2

Somewhat strong ..... 3  
(VOLUNTEERED)

Not applicable ..... 4



9. How often do you attend religious services? (RECORD ONLY)

Response

- Never ..... 0
- Less than once a year ..... 1
- About once a year ..... 2
- Several times a year ..... 3
- About once a month ..... 4
- 2 - 3 times a month ..... 5
- Nearly every week ..... 6
- Several times a week ..... 7

10. From what country did your father's ancestors come?

\_\_\_\_\_

11. Do you speak a second language?

Yes \_\_\_\_\_ Which one? \_\_\_\_\_  
No \_\_\_\_\_

*Now I have some questions about your living accomodations.*

12. How long have you lived in this residence?

Years or months \_\_\_\_\_

13. Do you own this house/apartment or pay rent?

Response

- Owns ..... 1
- Pays rent ..... 2
- Neither owns nor rents ..... 3



14. How many rooms do you have here, not counting hallways and bathrooms?

Number of rooms \_\_\_\_\_

15. Would you say that this home has enough space so you can do the things you want to do?

Yes \_\_\_\_\_ No \_\_\_\_\_

16. What do you think about the condition of this house/apartment?

Response

- Needs no repairs ..... 1
- Needs minor repairs ..... 2
- Needs major repairs ..... 3
- DK ..... 8
- NA ..... 9

17. (CARD A) How satisfied are you with this house/apartment?

Very Dissatisfied				Very Satisfied			DK	NA
1	2	3	4	5	6	7	8	9

ASK Q 18 TO Q 21 ONLY IF R RENTS.

18. (CARD B) About how much rent do you pay a month, including utilities?

Response

- |           |         |           |          |
|-----------|---------|-----------|----------|
| under 100 | .... 01 | 700 - 799 | .... 08  |
| 100 - 199 | .... 02 | 800 - 899 | .... 09  |
| 200 - 299 | .... 03 | 900 - 999 | .... 10  |
| 300 - 399 | .... 04 | 1000 +    | ..... 11 |
| 400 - 499 | .... 05 | DK        | ..... 12 |
| 500 - 599 | .... 06 | NA        | ..... 13 |
| 600 - 699 | .... 07 |           |          |



19. During the last two years, have you considered buying a home?

Response

Yes ..... 1  
 No ..... 2  
 NA (GO TO Q. 21) ..... 3

20. Have you actually looked for a home?

Response

Yes ..... 1                      No ..... 2

21. Why have you not purchased a home of your own? Please rank in order of importance. UP TO 5 RESPONSES.

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ASK ONLY IF R OWNS.

22. (CARD B) Think of the cost of this house/apartment -- such as mortgage payments, the maintenance costs, property taxes, and utilities. Which of the categories best describes how much you pay per month?

Response

under 100 ..... 01	700 - 799 ..... 08
100 - 199 ..... 02	800 - 899 ..... 09
200 - 299 ..... 03	900 - 999 ..... 10
300 - 399 ..... 04	1000 + ..... 11
400 - 499 ..... 05	DK ..... 12
500 - 599 ..... 06	NA ..... 13
600 - 699 ..... 07	





*Now I have some questions about this immediate neighbourhood, that is the ten or fifteen homes nearest to yours/or the apartments in this building and the area around this building.*

23. To what extent are any of the following, problems in this neighbourhood?

	Major Problem	Minor Problem	Not a Problem
Noisy neighbours .....	1	2	3
Vandalism .....	1	2	3
Abandoned houses .....	1	2	3
Noisy vehicles .....	1	2	3
Children and teenagers who misbehave .....	1	2	3
Poorly kept yards .....	1	2	3
Cats and dogs running loose .....	1	2	3
Traffic .....	1	2	3
Other (Specify) .....	1	2	3

---

24. (CARD A) All things considered, how satisfied are you with this neighbourhood as a place to live? Which number comes closest to how satisfied you feel?

Very Dissatisfied				Very Satisfied			DK	NA
1	2	3	4	5	6	7	8	9

IF R HAS A FAMILY ASK Q. 25; OTHERWISE GO TO Q. 26.

25. Do you feel there are sufficient places for your child(ren) to play in this neighbourhood?

Yes \_\_\_\_\_

No \_\_\_\_\_



26. (CARD A) How satisfied are you with your personal safety in this neighbourhood?

Very Dissatisfied				Very Satisfied			DK	NA
1	2	3	4	5	6	7	8	9

*Now I'd like to ask about your neighbours.*

27. How many of the adults in this neighbourhood would you know by name if you met them on the street?

Response

All of them .....	1
Almost all .....	2
More than half .....	3
About half .....	4
Less than half .....	5
Almost none .....	6
None .....	7

28. How often do you get together with any of these neighbours just for a chat?

Response

Daily or almost every day .....	1
1 - 3 times a week .....	2
1 - 3 times a month .....	3
Less than once a month .....	4
Never .....	5

29. How often do you spend a social evening with friends, either in your home or their home, who live outside the neighbourhood?

Response

Daily or almost every day ....	1	Never .....	5
1 - 3 times a week .....	2	Don't know ...	8
1 - 3 times a month .....	3	No answer ....	9
Less than once a month .....	4		



30. How often do you spend a social evening with relatives?

## Response

Daily or almost every day .....	1
1 - 3 times a week .....	2
1 - 3 times a month .....	3
Less than once a month .....	4
Never .....	5
No answer .....	9

31. How often do you go out for entertainment, like movies, night clubs, sports events, plays, concerts, etc.?

## Response

Daily or almost every day .....	1
1 - 3 times a week .....	2
1 - 3 times a month .....	3
Less than once a month .....	4
Never .....	5
DK .....	8
NA .....	9

32. (CARD A) All things considered, how satisfied are you with the recreational facilities available to you in Edmonton?

Very Dissatisfied				Very Satisfied			DK	NA
1	2	3	4	5	6	7	8	9





*Now I have a few questions about how satisfied you are with different parts of your life.*

33. (CARD A) For each area of life I am going to name, tell me the number that shows how much satisfaction you get from that area.

A. Your non-working activities -- hobbies and so on.

Very Dissatisfied				Very Satisfied			DK	NA
1	2	3	4	5	6	7	8	9

B. Your family life.

Very Dissatisfied				Very Satisfied			DK	NA
1	2	3	4	5	6	7	8	9

C. Your health and physical condition.

Very Dissatisfied				Very Satisfied			DK	NA
1	2	3	4	5	6	7	8	9

D. The amount of time you have for doing things you want to do.

Very Dissatisfied				Very Satisfied			DK	NA
1	2	3	4	5	6	7	8	9

E. Your friendships.

Very Dissatisfied				Very Satisfied			DK	NA
1	2	3	4	5	6	7	8	9

F. Your standard of living -- the things you have -- housing, car, furniture, recreation, and the like.

Very Dissatisfied				Very Satisfied			DK	NA
1	2	3	4	5	6	7	8	9

G. All in all how satisfied with life are you these days?

Very Dissatisfied				Very Satisfied			DK	NA
1	2	3	4	5	6	7	8	9



34. In general, do you find life exciting, pretty routine, or dull?

Exciting .....	1
Routine .....	4
Dull .....	7
No opinion .....	8
No answer .....	9

35. How often do you participate in a vigorous exercise program?

Never .....	1
Seldom .....	2
Weekly .....	3
More frequently .....	4
No answer .....	9

36. About how much beer, wine or liquor do you drink per week?

Response

None .....	1
1 - 7 drinks .....	2
8 - 15 drinks .....	3
16 or more drinks .....	4
Don't know .....	8
No answer .....	9

37. About how many cigarettes do you smoke per day?

Response

None .....	1	Don't know .....	8
1 - 9 .....	2	No answer .....	9
10 or more .....	3		

(NOTE OTHER SMOKING HABITS)



38. How often do you wear a seatbelt when you drive?

Always .....	1	Never .....	3
Occasionally .....	2	NA .....	9

39. How many cups of coffee and/or tea per day do you drink?

Number \_\_\_\_\_

*A few moments ago we talked about your personal safety. Now we would like to have your opinions about the nature of police and community relations.*

40. How good do you think relations are between the police and the people in this city?

Very good .....	1
Fairly good .....	2
Neither good nor bad .....	3
Not very good .....	4
Not good at all .....	5

41. Were you ever picked up and charged by the police, for any reason other than a traffic offense?

Yes .....	1	No .....	2	No answer .....	8
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42. In general, do you think the courts in this country deal too harshly or not harshly enough with criminals?

Too harshly .....	1
Not harshly enough .....	2
About right (VOLUNTEERED) ..	3
DK .....	8
No answer .....	9



43. Everything considered, would you say that, in general, you approve or disapprove of wiretapping?

Approve .....	1	No opinion .....	8
Disapprove .....	2	No answer .....	9

44. Do you favor or oppose the death penalty for persons convicted of murder?

Favor .....	1	Don't know .....	8
Oppose .....	2	No answer .....	9

45. Would you favor or oppose a law which would require a person to obtain a police permit before he or she could buy any gun or rifle?

Favor .....	1	Don't know .....	8
Oppose .....	2	No answer .....	9

46. When a policeman arrests a person, which of the following must he do before questioning the person?

- A. Is he required to read the person his rights?

Yes .....	1	DK .....	8
No .....	2	NA .....	9

- B. Is he required to tell the person he has a right to remain silent?

Yes .....	1	DK .....	8
No .....	2	NA .....	9

- C. Is he required to tell the person he has the right to a lawyer?

Yes .....	1	DK .....	8
No .....	2	NA .....	9





47. Would you say there has been any change in violent crime here in Edmonton in the past five years?

A lot more .....	1	Quite a bit less .....	5
Quite a bit more ....	2	A lot less .....	6
A little bit more ...	3	DK .....	8
A little bit less ...	4	No answer .....	9

48. During the last year did anyone illegally enter into your house/apartment?

Yes ..... 1      No ..... 2      NA ..... 9

49. During the last year, did anyone take something directly from you by using force?

Yes ..... 1      No ..... 2      NA ..... 9

50. What precautions have you taken to safeguard your house against burglarly? (CIRCLE THE CORRECT RESPONSE)

A. Do you lock your doors?

Yes ..... 1      No ..... 2      NA ..... 9

B. Are there special locks or bars or anything else like that on your windows?

Yes ..... 1      No ..... 2      NA ..... 9

C. Is there a burglar alarm?

Yes ..... 1      No ..... 2      NA ..... 9

D. Do you have an insurance policy that protects your house/apartment and belongings against theft?

Yes ..... 1      No ..... 2      NA ..... 9



*Now some questions about employment.*

51. Last week were you working full time, part time, going to school, keeping house, or what?

(CIRCLE ONE CODE ONLY IF MORE THAN ONE RESPONSE, GIVE PREFERENCE TO SMALLEST CODE THAT APPLIES.)

Response

Working full time .....	1
Working part time .....	2
With a job, but not at work because of temporary illness, vacation, strike .....	3
Unemployed, laid off, looking for work .....	4
Retired .....	5
In school .....	6
Keeping house .....	7
Other (specify) .....	8

Other \_\_\_\_\_

IF APPROPRIATE (1-4 ABOVE).

52. What kind of work (do/did) you normally do?

Occupation: \_\_\_\_\_

53. What kind of place (do/did) you work for?

Industry: \_\_\_\_\_

- 53A. Where (Location)? \_\_\_\_\_



ASK ONLY IF R IS MARRIED OR LIVING IN A COMMON-LAW-RELATIONSHIP;  
OTHERWISE SKIP TO Q. 57.

54. Last week was your spouse working full time?

Response

Working full time .....	1
Working part time .....	2
With a job, but not at work because of temporary illness, vacation, strike .....	3
Unemployed, laid off, looking for work .....	4
Retired .....	5
In school .....	6
Keeping house .....	7
Other (specify) .....	8
Not applicable .....	0

Other \_\_\_\_\_

55. What kind of work does your spouse do?

Occupation: \_\_\_\_\_

56. What kind of place (does/did) (he/she) work for?

Industry: \_\_\_\_\_

56A. Where (Location)? \_\_\_\_\_





IF NOT APPROPRIATE (NOT WORKING) GO TO Q. 60.

57. (CARD A) For each area of your job I'm going to name, tell me the number that shows how much satisfaction you get from that area.

A. The recognition you get from your job.

Very Dissatisfied				Very Satisfied			DK	NA	IA
1	2	3	4	5	6	7	8	9	0

B. Your control over the pace and quality of your work.

Very Dissatisfied				Very Satisfied			DK	NA	IA
1	2	3	4	5	6	7	8	9	0

C. The extent to which you can use your skills.

Very Dissatisfied				Very Satisfied			DK	NA	IA
1	2	3	4	5	6	7	8	9	0

D. The feeling of accomplishment for the work you are doing.

Very Dissatisfied				Very Satisfied			DK	NA	IA
1	2	3	4	5	6	7	8	9	0

E. The physical conditions under which you work, for example lighting, temperature, dust free, etc.

Very Dissatisfied				Very Satisfied			DK	NA	IA
1	2	3	4	5	6	7	8	9	0

F. The opportunity for advancement.

Very Dissatisfied				Very Satisfied			DK	NA	IA
1	2	3	4	5	6	7	8	9	0

G. The amount of pay.

Very Dissatisfied				Very Satisfied			DK	NA	IA
1	2	3	4	5	6	7	8	9	0

H. The degree of security.

Very Dissatisfied				Very Satisfied			DK	NA	IA
1	2	3	4	5	6	7	8	9	0



58. (CARD A) All things considered, how satisfied are you with your job? (Which number comes closest to how satisfied or dissatisfied you feel?)

Very Dissatisfied				Very Satisfied			DK	NA
1	2	3	4	5	6	7	8	9

59. What is the possibility of losing your job during the coming 12 months?

Very Likely ..... 1  
 Somewhat likely ..... 2  
 Not very likely ..... 3  
 Not at all likely ..... 4  
 Don't know ..... 8

60. Generally, do you approve or disapprove of a married woman working if she has a husband capable of supporting her?

Approve ..... 1  
 Disapprove ..... 2  
 Don't know ..... 3  
 No answer ..... 4



ASK Q'S 61 AND 62 ONLY IF R IS CURRENTLY MARRIED OR LIVING IN A COMMON-LAW-RELATIONSHIP: OTHERWISE SKIP TO Q. 63.

61. (CARD C) Please use the numbers on the card to tell me how you and your spouse share the following tasks:

A. Earning the family income.

Husband Entirely	Husband More	Share Equally	Wife More	Wife Entirely	DK	NA
1	2	3	4	5	8	9

B. Housekeeping.

Husband Entirely	Husband More	Share Equally	Wife More	Wife Entirely	DK	NA
1	2	3	4	5	8	9

C. Keeping in touch with relatives.

Husband Entirely	Husband More	Share Equally	Wife More	Wife Entirely	DK	NA
1	2	3	4	5	8	9

D. Organizing family recreation.

Husband Entirely	Husband More	Share Equally	Wife More	Wife Entirely	DK	NA
1	2	3	4	5	8	9

E. Taking care of preschool children. (younger than 5)

Husband Entirely	Husband More	Share Equally	Wife More	Wife Entirely	DK	NA
1	2	3	4	5	8	9

F. Teaching, helping, and disciplining girls, aged 6 - 12.

Husband Entirely	Husband More	Share Equally	Wife More	Wife Entirely	DK	NA
1	2	3	4	5	8	9

G. Teaching, helping, and disciplining boys, aged 6 - 12.

Husband Entirely	Husband More	Share Equally	Wife More	Wife Entirely	DK	NA
1	2	3	4	5	8	9



62. (CARD D) Please use the numbers on the card to tell me how often you and your spouse have disagreed about each of the following activities.

A. Housekeeping.

Never	Seldom	Some- times	Fre- quently	Very Fre- quently	NA
1	2	3	4	5	9

B. Earning money.

Never	Seldom	Some- times	Fre- quently	Very Fre- quently	NA
1	2	3	4	5	9

C. Visiting or writing relatives.

Never	Seldom	Some- times	Fre- quently	Very Fre- quently	NA
1	2	3	4	5	9

D. Recreation.

Never	Seldom	Some- times	Fre- quently	Very Fre- quently	NA
1	2	3	4	5	9

E. Confiding with each other about problems.

Never	Seldom	Some- times	Fre- quently	Very Fre- quently	NA
1	2	3	4	5	9

F. Care of pre-school children.

Never	Seldom	Some- times	Fre- quently	Very Fre- quently	NA
1	2	3	4	5	9

(THIS QUESTION CONTINUED ON NEXT PAGE)





Q. 62 Continued.

G. Teaching and disciplining girls, age 6 - 12.

Never	Seldom	Some- times	Fre- quently	Very Fre- quently	NA
1	2	3	4	5	9

H. Teaching and disciplining boys, age 6 - 12.

Never	Seldom	Some- times	Fre- quently	Very Fre- quently	NA
1	2	3	4	5	9

63. Are you in contact with any of your relatives?

Yes \_\_\_\_\_

No (GO TO Q. 65) \_\_\_\_\_

64. In the past two years or so, have you received any of the following kinds of help from your RELATIVES.  
Yes or No?

	YES	NO	NA	IA
A. Advice on a decision you had to make .....	1	2	9	0
B. Help on special occasions, such as childbirth, sickness .....	1	2	9	0
C. Help in caring for your children, such as babysitting .....	1	2	9	0
D. Financial assistance, such as money or a loan .....	1	2	9	0
E. Gifts, other than birthdays, Christmas, etc. ....	1	2	9	0
F. Home repairs, moving, odd jobs, etc. ....	1	2	9	0
G. Finding a job .....	1	2	9	0



65. Finally, we would like to know something about the groups and organizations to which you belong. Could you name them? (PROBE)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

*Now we would like to ask you some questions about family size.*

66. What do you think is the ideal number of children for a family to have?

Number \_\_\_\_\_

IF APPLICABLE.

67. How many children have you ever had? Please count all that were born alive at any time (including any you had from a previous relationship.)

Number \_\_\_\_\_

68. Do you expect to have any (more) children?

Response

Yes (ASK Q. 68) ..... 1

No (GO TO Q. 69) ..... 2

Uncertain (GO TO Q. 69) ..... 3

Not asked, inappropriate .... 4

No answer ..... 9

69. How many (more)?

Number \_\_\_\_\_



70. (CARD E) Would you approve or disapprove of a married couple not bearing or rearing children?

Strongly Disapprove				Strongly Approve			DK	NA
1	2	3	4	5	6	7	8	9

71. Do you think birth control information should be available to teenagers who want it?

Response

Should be available ..... 1  
 Should not be available ..... 2  
 Depends on the age/grade ..... 3  
 (VOLUNTEERED)  
 No opinion ..... 8  
 No answer ..... 9

72. Please tell me whether or not you think it should be possible for a pregnant woman to obtain a legal abortion if ... READ EACH STATEMENT, AND CIRCLE ONE CODE FOR EACH.

	YES	NO	DK	NA
A. there is a strong chance of serious defects in the baby? .....	1	2	8	9
B. she is married and does not want any more children? .....	1	2	8	9
C. the woman's own health is seriously endangered by the pregnancy? .....	1	2	8	9
D. the family has a very low income and cannot afford any more children? ...	1	2	8	9
E. she became pregnant as a result of rape? .....	1	2	8	9
F. she is not married and does not want to marry the father? .....	1	2	8	9





73. Are you against sex education in the schools?

Response

For .....	1
Against .....	2
Depends on the age/grade .....	3 (VOLUNTEERED)
Don't know .....	8
No answer .....	9

*Now some questions about finances.*

74. Would you say that you (and your family) are better off or worse off financially than you were a year ago?

Response

Better now .....	1
Same .....	2
Worse .....	3
Don't know .....	8

75. Now looking ahead -- do you think that a year from now you (and your family) will be better off financially, or worse off, or just about the same as now?

Response

Will be better off .....	1
Same .....	2
Will be worse off .....	3
Don't know .....	8



76. (CARD F) Would you please tell me the letter on this card which best represents your total family income for 1976, before taxes?

Response

A. Under \$2,000 .....	01
B. \$2,000 - \$2,999 .....	02
C. \$3,000 - \$3,999 .....	03
D. \$4,000 - \$4,999 .....	04
E. \$5,000 - \$5,999 .....	05
F. \$6,000 - \$6,999 .....	06
G. \$7,000 - \$7,999 .....	07
H. \$8,000 - \$9,999 .....	08
I. \$10,000 - \$11,999 .....	09
J. \$12,000 - \$14,999 .....	10
K. \$15,000 - \$17,499 .....	11
L. \$17,500 - \$19,999 .....	12
M. \$20,000 - \$22,499 .....	13
N. \$22,500 - \$24,999 .....	14
O. \$25,000 - \$29,999 .....	15
P. \$30,000 - \$34,999 .....	16
Q. \$35,000 and over .....	17
Don't know .....	88
No answer .....	99



77. (REFER R TO RESPONSE SHEET) Here is a sheet which we would like you to fill out to describe Edmonton as it appears to you. For example, if you think Edmonton is especially attractive, please put an "X" in the box next to the word "attractive". If you think it is especially unattractive, please put an "X" next to "unattractive", and if you think it is somewhere in between, please put an "X" in the box where you think it belongs.

ATTRACTIVE	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	UNATTRACTIVE
UNFRIENDLY PEOPLE	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	FRIENDLY PEOPLE
CROWDED	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	UNCROWDED
VERY GOOD PLACE TO LIVE	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	VERY POOR PLACE TO LIVE
PLEASANT	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	UNPLEASANT
BIG CITY	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	RURAL
NOTHING TO DO	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	LOTS OF THINGS TO DO
HARD TO GET AROUND IN	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	EASY TO GET AROUND IN
BAD PLACE TO RAISE CHILDREN	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	GOOD PLACE TO RAISE CHILDREN
SAFE	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	UNSAFE
POOR CLIMATE	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	GOOD CLIMATE
CLEAN AIR	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	DIRTY AIR



TO BE COMPLETED BY INTERVIEWER

## 1. Housing type:

Single House .....	1
Semi-detached .....	2
Duplex .....	3
Row House .....	4
Apartment or Multiple Dwelling .....	5
House attached to a Non-residential structure ....	6
Mobile Home .....	7
Other (specify) .....	8

## 2. Respondents Cooperation:

Cooperative .....	1
Indifferent .....	2
Uncooperative .....	3

## 3. Quality of Interview:

High Quality .....	1
Adequate .....	2
Questionable .....	3

## 4. Comments of Interviewer:

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## APPENDIX II

PHOTOGRAPHS OF SELECTED NEIGHBOURHOODS IN EDMONTON, ALBERTA



For each neighbourhood presented in this appendix an overall neighbourhood satisfaction score is given. This index has a mean of 5.470, a range from 2 to 7, and a standard deviation of 0.873.



Some neighbourhoods have a poor transition from private space to public space. This neighbourhood can easily be invaded by residents who are not regular users and, therefore, the neighbourhood residents cannot control who uses or enters their neighbourhood. An opportunity for invasion of privacy is further enhanced because the houses border on two main arteries with commercial development next to the neighbourhood. The low fences cannot serve to establish primary territorial boundaries or attenuate the problem of invasion. Neighbourhood satisfaction is 2.37. The neighbourhood is neither fine nor coarse grain in structure. The neighbourhood is conventional in design.





This neighbourhood also has a poor transition from private space to public space. In this neighbourhood, there is really no secondary territory once one leaves the confines of the building. Neighbourhood satisfaction is 2.84. The neighbourhood is fine grain in structure, and is conventional in design.







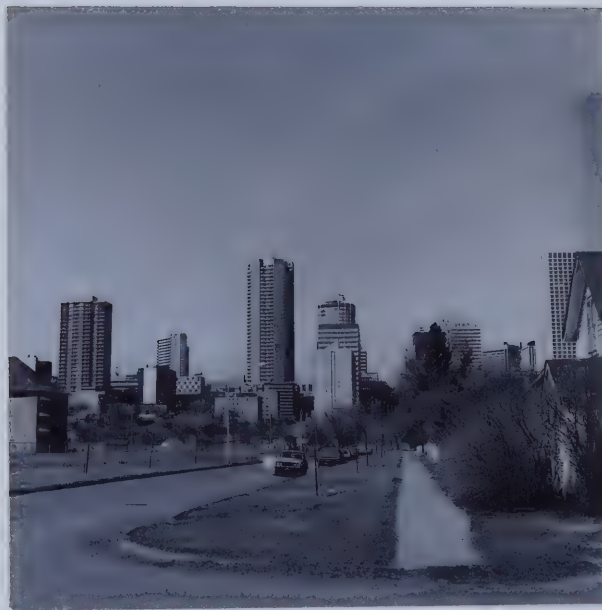
Here the neighbourhood has a service road that creates secondary territory. Because this road acts as a bridge between primary and public space, the neighbourhood provides more privacy for local residents than the neighbourhoods on the preceding pages. The fact, however, that the houses are not separated from the main artery by a berm or other boundary makes the service road less effective.

Neighbourhood satisfaction is 5.46. The neighbourhood is neither fine nor coarse grain in structure. It is by definition a neighbourhood unit.





Although there is a main artery on the border of this neighbourhood, it does not pass through the neighbourhood itself. The presence of fences, trees, sidewalks, and green space all serve to establish a better transition from private to public space. Neighbourhood satisfaction is 6.52. The neighbourhood is coarse grain in structure, and is conventional in design.





The quality and quantity of open space within this neighbourhood leave something to be desired. Such a large open area makes it difficult for residents to define the space, so it is underused. Furthermore, a large open area such as this creates the opportunity for invasion of neighbourhood privacy because of its very public nature. Neighbourhood satisfaction is 4.56. The neighbourhood is coarse grain in structure, and is by definition a neighbourhood unit.





Some neighbourhoods provide open spaces small enough to provide secondary territory for exclusive use and control by local residents. Here, the open space is clearly defined, safe, and readily accessible to the neighbourhood.

Neighbourhood satisfaction is 6.44. The neighbourhood is coarse grain in structure, and is conventional in design.







This neighbourhood creates the opportunity for the invasion of primary territory because of the insertion of a high-rise apartment block among single-family units. Neighbourhood satisfaction is 4.93. The neighbourhood is fine grain in structure, and is conventional in design.





This neighbourhood has no secondary territory or any means of generating it. Primary territory may also be intruded upon because the apartments are built so close together. Neighbourhood satisfaction is 3.75. The neighbourhood is coarse grain in structure, and conventional in design.





This neighbourhood allows external primary territory to be maintained and curtails the possibility of invasion by having only single-family units present and a road system that is primarily for local use. Neighbourhood satisfaction is 6.33. The neighbourhood is coarse grain in structure and conventional in design.





In this neighbourhood there is a good transition from private to public space. The cul-de-sac creates secondary territory for the exclusive use of the residents bordering on it. Neighbourhood satisfaction is 6.04. The neighbourhood is coarse grain in structure, and is by definition a neighbourhood unit.



















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